

C. Remarks

The claims are 1, 4-8, 19, 22-27, 30, 31 and 34, with claims 1 and 19 being independent. Claims 2, 3, 9-18, 20, 21, 28, 29, 32 and 33 have been cancelled without prejudice or disclaimer. Independent claims 1 and 19 have been amended to more clearly define the scope of Applicants' invention; more specifically, the subject matter of cancelled claims 2 and 3 and cancelled claims 20 and 21 have been added to claims 1 and 19, respectively. Also claims 22 and 24 have been amended to properly depend from independent claim 19, and the remaining amendments address minor informalities. Applicants submit that no new matter has been added. Reconsideration of the present claims is respectfully requested.

Claims 1-3, 9, 13, 19 and 20 stand rejected under 35 U.S.C. §102(b) as being anticipated by Ishinaga (EP 0 934 829). Applicants respectfully traverse this rejection.

The claimed invention is directed to an ink jet recording method for ejecting ink, wherein the ink has a maximum temperature at the surface of the protection film of not higher than 560°C. Further, when a discrimination is made that the maximum temperature may exceed 560°C, based upon the temperature of the ink and the driving signal, the driving signal to the heat generating resistor is stopped. This latter feature is effective to prevent the maximum temperature from exceeding 560°C and, therefore, to suppress the production of burnt deposit.

Ishinaga teaches that bubble generation begins when the temperature of the contact surface between the anti-cavitation layer and the ink reaches approximately 300°C. Ishinaga also discloses that the ejection heater exhibits low durability when the surface temperature exceeds 700-800°C. Nowhere does Ishinaga teach or suggest an ink jet recording method wherein the ink has a maximum temperature at the surface of the protection film of no more than 560°C and, when this temperature is exceeded, the driving signal to the heat generating resistor is stopped. Likewise Ishinaga does not teach or suggest the control of the maximum temperature applied to the ink by controlling the pulse width of the driving signal.

Applicants respectfully disagree with the Examiner's assertion that Ishinaga discloses this latter feature. At most, Ishinaga discloses controlling the amount of ejection liquid by controlling the pulse width. Therefore, Applicants respectfully submit that the claimed invention is not anticipated by Ishinaga.

Claims 4, 5, 14 and 15 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Ishinaga in view of Hidetaka (JP 10204351). Claims 6-8, 10-12, 16-18 and 27-30 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Ishinaga. Applicants respectfully traverse these rejections and submit that these claims, which depend from either independent claim 1 or claim 19, are patentable for at least the reasons discussed above regarding the disclosure of Ishinaga.

Claims 21 and 24-26 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Ishinaga in view of Nishikori (U.S. Patent No. 5,880,751). Claims 22 and 23 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Ishinaga as modified by Nishikori and in view of Hidetaka. Applicants respectfully traverse these rejections and submit that these claims, which depend from independent claim 19, are patentable for at least the reasons discussed above with regard to Ishinaga. What is more, Nishikori discloses controlling pulse width in accordance with the change of the recording head temperature. Nowhere does Nishikori teach or suggest stopping the driving signal to the heat generating resistor based upon a determination of a maximum allowable ink temperature. Accordingly, for at least the reasons discussed herein, Applicants submit that the claimed invention is not obvious over Ishinaga in view of Nishikori and respectfully request withdrawal of the rejection under 35 U.S.C. § 103(a).

Claims 31-34 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Ishinaga in view of Hirano (U.S. Patent No. 6,120,130). Applicants respectfully traverse this rejection and submit that these claims, which depend from independent claim 19, are patentable for at least the reasons discussed above with regard to Ishinaga.

In view of the foregoing remarks, Applicants respectfully request favorable reconsideration and passage to issue of the present application. Should the Examiner believe that issues remain outstanding, it is respectfully requested that the Examiner contact Applicants' undersigned attorney in an effort to resolve such issues and advance the case.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to the below listed address.

Respectfully submitted,

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